MULTI-CAST COMMUNICATION SYSTEM AND METHOD OF ESTIMATING CHANNEL IMPULSE RESPONSES THEREIN

Abstract of the Disclosure

Multiple Steiner codes are transmitted as bursts (s_{11}, s_{12},... s_{33}, 560, 524) from multiple base stations (182, 184, 186) having one or more transmit elements (174, 176, 178, 180), with successive bursts providing an extended training sequence for use in channel estimation at an addressed unit (172), such as a mobile handset. Accurate channel estimation is possible through the use of Wiener frequency domain MMSE deconvolution (518) combined with frequency domain spatial decoupling matrices, with quasi-orthogonal pseudo-noise sequences (502, 504, 520, 522) allocated to base stations and their antenna elements. The use of Steiner codes to supplement Wiener frequency domain MMSE deconvolution and frequency domain spatial decoupling results in the possibility of allocating only a single training sequence to each base station provided that the training sequence is of sufficient length to encompass all multiple time-translated channel impulse responses (H).